

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
Olivier DUREL et al.) Group Art Unit: 1713
Application No.: 10/777,075) Examiner: Peter D. MULCAHY
Filed: February 13, 2004) Confirmation No.: 4136
For: DIENE RUBBER COMPOSITION)
FOR TIRE COMPRISING A SPECIFIC)
SILICA AS)

DECLARATION PURSUANT TO 37 C.F.R. §1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Arnaud Lapra declare the following:

- (1) I am a French citizen and have the following mailing address:
60 rue Principale, 63450 Saint-Saturnin, France,
- (2) I graduated from the Ecole Supérieure de Physique et Chimie Industrielle de la Ville de Paris (ESCPI) in 1996, with a PhD obtained in 1999 at the University Pierre et Marie Curie (Paris VI).
- (3) I have been employed with Manufacture Française des Pneumatiques Michelin since 1999, managing a Research team in the domain of reinforcing fillers for tire rubber compositions up to the end of 2005 ; I am currently engaged in Research and Development on tire tread formulations.
- (4) I am a co-inventor of the present invention ; I have read and am familiar with the above-identified United States patent application filed February 13, 2004 and the Office Action dated June 30, 2006.

(5) The following experiments were conducted by me or under my direct supervision:

EXPERIMENTS

Tire P-8 was prepared in the same manner as described in the present specification, except that the silica described in U.S. Patent 6,191,205 to Micouin et al. was used. Wear resistance of Tire P-8 was then evaluated in the same manner as described in the present specification. The properties of the silica and test result for Tire P-8 are summarized in the table below, along with those for Tires P-1, P-2 and P-4 described in the present specification:

TIRE:	P-1	P-2	P-4	P-8
Rubber composition:	C-1	C-2	C-4	C-8
Silica :	A (Reference) Zeosil 1165	B (Invention)	C (Invention)	Silica according to US 6,191,205
BET surface (m ² /g)	160	240	222	215
CTAB surface (m ² /g)	155	221	200	194
d _w (nm)	59	79	68	42
L / FI	0.39	0.62	0.70	0.21
N _{SiOH/nm²}	8.10	3.90	4.50	6.1
d) : d _w ≥ 16,500/CTAB - 30 ?	NO (59 < 76)	YES (79 ≥ 45)	YES (68 ≥ 53)	NO (42 < 55)
e) : L / FI ≥ -0.0025 CTAB + 0.85 ?	NO (0.39 < 0.46)	YES (0.62 ≥ 0.30)	YES (0.70 ≥ 0.35)	NO (0.21 < 0.37)
f) : N _{SiOH/nm²} ≤ -0.027 CTAB + 10.5 ?	NO (10.1 > 8.1)	YES (3.9 ≤ 4.5)	YES (4.5 ≤ 5.1)	NO (6.1 > 5.3)
Wear Resistance	100	114	110	100

All symbols contained in the table have the same meanings as described in the specification.

As shown by the data in the above table, neither the Reference silica (i.e., Zeosil 1165) nor the silica according to Micouin et al. meets the three criteria (d), (e) and (f) of the present invention.

The results in the above table also show that the silica according to Micouin et al. provided the same wear resistance value (100) as Tire P-1 containing Zeosil 1165. For this reason, I conclude that the silica according to Micouin et al. does not bring any improvement in terms of wear resistance, contrary to Tires P-2 and P-4 according to the present invention. That is, the present invention provides unexpectedly superior results.

I further declare that all statements made herein of my own knowledge are true and that all statements on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful statements may jeopardize the validity of the application or any patent issuing thereon.

Date: December 20, 2006

By: Lapra Arnaud

